Aircrew Coordination Exportable Training Package Trainer Guide

United States Army Aviation Center

October 2001

United States Army Research Institute for the Behavioral and Social Sciences

Approved for public release; distribution is unlimited.

20020206 140

REPORT DOCUMENTATION PAGE

1. REPORT DATE (dd-mm-yy) October 2001	2. REPORT TYPE Final	3. DATES COVERED (from. . . to) Jan 92 – Dec 92

4. TITLE AND SUBTITLE Aircrew Coordination Exportable Training Package Trainer Guide	5a. CONTRACT OR GRANT NUMBER
	5b. PROGRAM ELEMENT NUMBER
6. AUTHOR(S) Dynamics Research Corporation	5c. PROJECT NUMBER
	5d. TASK NUMBER
	5e. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dynamics Research Corporation Systems Division 60 Concord St. Wilmington, MA 01887	8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences Attn: TAPC-ARI-IR 5001 Eisenhower Avenue Alexandria, VA 22333-5600	10. MONITOR ACRONYM ARI
	11. MONITOR REPORT NUMBER Contractor Report 2002-05

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT *(Maximum 200 words)*:

This is one of thirteen archival reports from a series of research and development contracts dealing with aircrew coordination.

15. SUBJECT TERMS
Aircrew coordination, rotary wing

SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT	20. NUMBER OF PAGES	21. RESPONSIBLE PERSON (Name and Telephone Number) Dennis Wightman DSN 558-2834
16. REPORT Unclassified	17. ABSTRACT Unclassified	18. THIS PAGE Unclassified	Unlimited	83	

United States Army Aviation Center
Fort Rucker, Alabama

AIRCREW COORDINATION
EXPORTABLE TRAINING PACKAGE

TRAINER GUIDE

December 1992

THE PROPONENT FOR THIS ETP IS DOTD

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY AVIATION CENTER AND FORT RUCKER
FORT RUCKER, ALABAMA 36362

(FILE SYMBOL)   DATE:

SUBJECT: Aircrew Coordination Exportable Training Package

COMMANDERS (ALL LEVELS)

(BODY OF LETTER)

(SIGNATURE BLOCK)

Introducing the Aircrew
Coordination Exportable
Training Package

Introducing the Aircrew Coordination Exportable Training Package

The Aircrew Coordination Exportable Training Package comprises two complete courses: The Aircrew Coordination Trainer Course and the Aircrew Coordination Course. Included in the package are the three course guides used in the conduct of the two courses and the reproducible materials required to support instruction. The course guides and reproducible materials are described in detail below. Following the description of this material, the procedures to conduct each of the two courses are provided.

.... **Description of the Course Guides and Reproducible Materials** ....

As stated above, the Aircrew Coordination Exportable Training Package includes three course guides together with the reproducibles required to support the classroom, simulator, or flight instruction.

The three course guides are the:

- Aircrew Coordination Course Trainer Guide

  The *Trainer Guide* is used by trainers (USAAVNC certified instructors*) during the Aircrew Coordination Trainer Course to instruct unit instructors (unit IPs, UTs, and IOs) who will subsequently conduct the Aircrew Coordination Course to train and evaluate unit aircrews.

  (*Certified means received the Aircrew Coordination Trainer Course and taught the Aircrew Coordination Course under supervision.)

- Aircrew Coordination Course Instructor Guide

  The *Instructor Guide* is used by unit instructors 1) to take notes during the Trainer Course and 2) to conduct the Aircrew Coordination Course.

- Aircrew Coordination Course Student Guide

  The *Student Guide* is used by the aircrews for note taking and reference purposes while attending the Aircrew Coordination Course.

The reproducibles, which are contained in the Reproducible Box, include the material that is used during the conduct of the courses and, therefore, cannot be reused in subsequent courses; thus, this material must be reproduced before the start of each new

course. The most cost effective means of reproduction is to have materials printed through the local Training Aids Support Center (TASC). The reproducible materials are listed in the following table and are noted in text here and throughout the three guides where appropriate.

Reproducible Materials

Materials	Guide and section in which the material is located
Instructor Read-Ahead	*Trainer Guide*, Appendix A. Trainers will issue to unit instructors one week prior to the start of the Aircrew Coordination Trainer Course.
Student Read-Aheads	*Instructor Guide*, Appendix A. For the Trainer Course, trainers will issue Student Read-Ahead 1 to unit instructors prior to the pretraining ride and Student Read-Ahead 2 subsequent to the pretraining ride. For the Aircrew Coordination Course, instructors will provide the Student Read-Aheads to unit aircrews on the same basis.
Grade Slips	*Instructor Guide*, Appendix C. Grade slips are used by the trainers and unit instructors to evaluate aircrew coordination. As such, sufficient numbers must be reproduced prior to the start of each new course and distributed as necessary.
Practical Exercises	*Instructor Guide*, Appendix G. Instructors will pass out to students during the Aircrew Coordination Course. Students will insert the exercises into Section 2 of their *Student Guide*.
Student Handout	*Student Guide*, Section 1. This is an outline form of the Aircrew Coordination Course on which the students will take notes. Before the start of each new course, instructors will reproduce this section and insert it into the *Student Guide*.

The following sections describe in detail each of the course guides, how the guides are used, and the reproducible materials supporting each course.

Trainer Guide

The *Trainer Guide* contains a lead-in outlining the conduct of the Aircrew Coordination Trainer Course, five major sections, and a supporting appendix. Trainers use the *Trainer Guide*, together with the *Instructor Guide* and the *Student Guide*, to conduct the Trainer Course. (*Note: Because the Instructor Guide and Student Guide will be required by the unit instructors to conduct the Aircrew Coordination Course, the unit instructors will keep the guides upon completion of the course.*) Each of the parts of the Trainer Guide is explained below.

About the Trainer Course: Provides the trainer with the information necessary to conduct the Aircrew Coordination Trainer Course.

Section 1 - Course Introduction and Learning Objectives: Administrative details covering course conduct, together with the terminal and enabling learning objectives, are outlined for the general information of the students. (Section 1 of the *Instructor Guide* is an outline form of this section, on which unit instructors will take notes during the Trainer Course.)

Section 2 - Methods of Instruction: Presents instructional techniques and background information on the unique features of the course necessary for unit instructors to effectively teach the course to aircrews of their respective organizations. Included in this section is the rationale underlying the structure of the course, an explanation of the interrelationships between the various components composing the course, and the instructional techniques recommended to effectively present the Classroom Instruction and the hands-on simulator or flight training instruction. (Section 2 of the *Instructor Guide* is an outline form of this section, on which unit instructors will take notes during the Trainer Course.)

Section 3 - Aircrew Coordination Course: At this point in the Trainer Course, unit instructors are referred to Section 3 of the *Instructor Guide*, and the Aircrew Coordination Course is presented in its entirety, including the scenario or flight training. Being involved in the actual conduct of the Aircrew Coordination Course will provide unit instructors with the necessary experience on which to base their own presentation of the Aircrew Coordination Course.

Section 4 - Evaluation Procedures and Scenario Development: Provides unit instructors with the information and techniques necessary to develop scenarios and to evaluate unit aircrews undergoing initial crew coordination training. Unit instructors are provided the hands-on opportunity to use the information and forms required to objectively evaluate aircrews on their application of the crew coordination principles. (Section 4 of the *Instructor Guide* is an outline form of this section, on which unit instructors will take notes during the Trainer Course.)

Section 5 - Scenario Familiarization and Evaluation: Introduces unit instructors to the types of scenarios best suited for the conduct of crew coordination training. Unit instructors will also be given hands-on practice at applying the evaluation procedures taught in the previous section through the rating of crews made up of fellow unit instructors. (Section 5 of the *Instructor Guide* is an outline form of this section, on which unit instructors will take notes during the Trainer Course.)

Appendix A - Instructor Read-Ahead: The Instructor Read-Ahead is issued by the trainer cadre to each unit instructor at least one week before they attend the Aircrew Coordination Trainer Course. Because the trainers will have to provide a copy of the read-ahead to each member attending each of the Aircrew Coordination Trainer Courses, the read-ahead is provided as a reproducible. No other parts of the Trainer Guide need to be reproduced for distribution to the unit instructors.

Instructor Guide

The *Instructor Guide* mirrors the *Trainer Guide*; it has an Introduction, five major sections, and supporting appendices. As stated earlier, unit instructors will use the *Instructor Guide* to take notes during the Trainer Course and to conduct the Aircrew Coordination Course. (Unit instructors will also be provided a copy of the *Student Guide* and instructed on how they will use it when they conduct the Aircrew Coordination Course.)

Introducing the Instructor Guide: The purpose and use of the *Instructor Guide* is explained, together with a description of the major parts and their function in the presentation of the Aircrew Coordination Course.

Section 1 - Course Introduction and Learning Objectives: Provides 1) an area for the recording of administrative data pertinent to the conduct of the Aircrew Coordination Trainer Course and 2) the terminal and enabling learning objectives of the course.

Section 2 - Methods of Instruction: This is an outline form of Section 1 of the *Trainer Guide*. Unit instructors will take notes on this outline during presentation of the Aircrew Coordination Trainer Course and will use it for future reference when conducting the Aircrew Coordination Course.

Section 3 - Aircrew Coordination Course. This section contains all of the information necessary for the unit instructors to subsequently teach the Aircrew Coordination Course to unit rated and nonrated crewmembers. The section is divided into three parts:

> *About the Aircrew Coordination Course*: Provides unit instructors with the information necessary to conduct the Aircrew Coordination Course.

> *Classroom Instruction*: Provides the 1) the administrative data pertinent to the conduct of the Aircrew Coordination Course, 2) the terminal and enabling learning objectives of the course, and 3) the information required by unit rated and nonrated crewmembers to understand and apply the principles of crew coordination during training and evaluation rides in the simulator or aircraft.

> *Simulator or Flight Training and Evaluation*: Provides the hands-on opportunity for unit rated and nonrated crewmembers to apply, and be evaluated on the application of, the crew coordination principles learned in the classroom.

Section 4 - Evaluation Procedures and Scenario Development: This is an outline form of Section 4 of the *Trainer Guide*. Unit instructors will take notes on this outline during presentation of the Aircrew Coordination Trainer Course and will use it for future reference when conducting the Aircrew Coordination Course.

Section 5 - Scenario Familiarization and Evaluation: This is an outline form of Section 5 of the *Trainer Guide*. Unit instructors will take notes on this outline during presentation of the Aircrew Coordination Trainer Course and will use it for future reference when conducting the Aircrew Coordination Course.

Appendix A - Student Read-Aheads: Because trainers and unit instructors will have to provide a copy of each of the two read-aheads contained in the appendix, they are provided as reproducibles and, therefore, can be prepared before the start of each new course and distributed as necessary. For the Trainer Course, Student Read-Aheads 1 and 2 will be provided by the trainers to the unit instructors prior and subsequent to the pretraining ride, respectively. For the Aircrew Coordination Course, unit instructors will furnish the Student Read-Aheads to unit aircrews on the same basis.

Appendix B - Case Study Discussion Guide: Broken wing awards and Army aviation accident cases from the US Army Safety Center Aviation Safety Management Information System data base are provided to support discussion of each of the BQs discussed during the Aircrew Coordination Course. To assist unit instructors, the lesson plan refers to cases applicable to the BQs being discussed; after gaining experience in conducting the course, however, other examples may be preferred and used. Appendix D of the *Student Guide* mirrors this appendix except it lacks the instructor's case study discussion notes.

Appendix C - Grade Slips: Contains the modified grade slips to be used during initial aircrew coordination training. Because the grade slips used by the trainers and unit instructors to evaluate aircrew coordination are not reusable, they are provided as reproducibles. As such, sufficient numbers must be reproduced prior to the start of each new course and distributed as necessary.

Appendix D - Aircrew Coordination Evaluation Workshop: Practical exercises are provided to establish a consistent, standardized approach by unit instructors performing evaluations. Criterion-referenced standards in the form of behavioral rating guides will be used to achieve objective evaluator ratings.

Appendix E - Aircrew Coordination Evaluation Process: Contains the procedures for use by evaluators in evaluating aircrew coordination from the time the aircrew begins the premission planning process until the crew-level after-action review is completed.

Appendix F - Scenario Guidance: Contains guidelines for use by scenario developers. It is important that each scenario developed reflects the unit METL to effectively utilize training time available.

Appendix G - Practical Exercises: Contains hard copies of the reproducible practical exercises to be passed out to the aircrews during the Aircrew Coordination Course. The four practical exercises are Stress, Planning and Rehearsal, Hazardous Thought Patterns, and Communication. Because the exercises cannot be reused, they are provided as reproducibles and must be prepared in sufficient copies for each new course.

Student Guide

The *Student Guide* consists of an Introduction, the Student Handout, and supporting appendices. The Student Handout provides a valuable source of crew coordination information for use during continuation crew coordination training and crew readiness level performance checks. The appendices also contain supporting information necessary for instructor personnel to conduct either the Aircrew Coordination or Aircrew Coordination Trainer Courses. As a repository for supporting information discussed during the courses, the appendices allow for upgrading to reflect current information without having to rewrite the entire *Student Guide*. *(Note: In that they cannot be reused and contain notes taken during the Aircrew Coordination Course for future reference, Sections 1 and 2 of the Student Guide are retained by the students upon completion of the course. Instructors must reproduce Sections 1 and 2 and insert them into the guides for use in the next course.)*

Introducing the Student Guide: Explains the use of the *Student Guide* and the various sections and appendices.

Section 1 - Student Handout: The Student Handout is an outline form of the information contained in Section 3 of the *Instructor Guide*. Sufficient white space is provided for the training aircrews to take notes as unit instructors conduct the Aircrew Coordination Course. As such, the Student Handout is not reusable and is provided as a reproducible that must be copied in sufficient numbers for each new course.

Section 2 - Practical Exercises: This section is provided as a place-holder for each of the four practical exercises as they are completed.

Appendix A - Hangar Talk: This appendix is a place holder for trainers and instructors to store recent FLIGHTFAX or other aviation-related documents covering crew coordination. In this way, current information may be provided to the unit instructors or unit aircrews between updates of the Aircrew Coordination Exportable Training Package.

Appendix B - Crew Coordination Errors: Definitions and Examples: Contains Army aviation accidents organized by the six aircrew coordination errors outlined in TC 1-210 and the ATMs. It provides another source for accident cases and a different point of view for selecting accidents to highlight specific crew coordination principles.

Appendix C - Selected Accidents by ATM Task: Provides Army aviation accidents organized by the ATM task being performed immediately before the onset of the emergency precipitating the accident. As with Appendix B, it provides another point of view from which to discuss violations of specific crew coordination principles.

Appendix D - Aircrew Coordination Case Studies: Mirrors Appendix B of the *Instructor Guide* minus the instructor discussion notes. Contains narratives of Army aviation accidents that may be selected for analysis during the Aircrew Coordination Course.

Appendix E - Aircrew Coordination Training Evaluation Guide: Contains the evaluation instructions for use in conjunction with the modified Aircrew Coordination Training Grade Slips. The grading and rating systems, rating factors, and behavioral anchors are also explained.

Appendix F - Simulator or Flight Mission Materials: Provides a listing of the materials required for the simulator or flight missions flown during the Aircrew Coordination and Aircrew Coordination Trainer courses.

Appendix G - Background Reading: Selected readings in crew coordination are provided to add depth to the topics discussed during the Aircrew Coordination and Aircrew Coordination Trainer courses. Readings are cited in the Aircrew Coordination Course lesson plan and the read-aheads. Readings will be discussed during the first hour of instruction subsequent to their assignment.

The procedures involved in conducting the two courses included in the Aircrew Coordination Exportable Training Package are explained below.

Trainer Procedures for the Aircrew Coordination Trainer Course

The Aircrew Coordination Trainer Course is used to train unit instructors to present and evaluate the application of crew coordination principles embodied in the Aircrew Coordination Course.

Trainers presenting the Aircrew Coordination Trainer Course must do the following:

1. Review the Course Description, Training Aids Index, and Special Instructions starting on page xvii of the *Trainer Guide*.

2. Determine the number of unit instructors attending the course and obtain sufficient copies of the *Instructor Guide*, the *Student Guide*, and the reproducible sections of each to provide one set per unit instructor. Subsequent to the course, provide one set of audio-visual materials (viewgraphs and videotape) to each graduate or as determined by USAAVNC.

3. Arrange with the simulator facility to obtain "canned" scenarios that may be modified to reflect appropriate unit METLs, or develop METL-based scenarios for use during the Scenario Familiarization and Evaluation section of the course. Appendix F of the *Instructor Guide* provides guidance for the development of scenarios.

4. Develop a simulator or flight schedule that ensures:

    a. The pretraining rides (Aircrew Coordination Course) are accomplished within the week prior to the course start date

    b. The two training rides are accomplished within two weeks of the completion of classroom training (Aircrew Coordination Course)

    c. The practice evaluation ride (Aircrew Coordination Trainer Course) is accomplished within two weeks of completing the scenario familiarization part of the Scenario Familiarization and Evaluation section.

5. Ensure that each unit instructor is provided Student Read-Ahead 1 at least one week prior to the pretraining ride, Student Read-Ahead 2 upon completing the pretraining ride, and the Instructor Read-Ahead at least one week prior to the course start date.

6. Conduct the course as scheduled. During the Aircrew Coordination Course, advise unit instructors to take notes on Section 3 of the *Instructor Guide* not on the Student Handout. Answer all pertinent unit instructor questions on the conduct of either course. Provide a telephonic contact point should any question arise subsequent to the course.

7. Ensure that an appropriate notation as to the completion of initial aircrew coordination training is made on each rated and nonrated unit instructor's flight record.

Instructor Procedures for the Aircrew Coordination Course

The Aircrew Coordination Course is used to train unit aircrews in the application of crew coordination principles to achieve the safe, efficient, and effective accomplishment of flying missions.

Unit instructors presenting the Aircrew Coordination Course must do the following:

1. Review the Course Description, Training Aids Index, and Special Instructions starting on page 3-1 of the *Instructor Guide*.

2. Determine the number of unit aircrews attending the course and obtain sufficient copies of the *Student Guide* and the reproducible items to provide one set per rated and nonrated crewmember.

3. Arrange with the simulator facility to obtain "canned" scenarios that may be modified to reflect appropriate unit METLs, or develop METL-based scenarios for use during Simulator or Flight Training. Appendix F of the *Instructor Guide* provides guidance for the development of scenarios.

4. Develop a simulator or flight schedule that ensures the pretraining rides are accomplished within two weeks prior to the course start date and that the two training rides and evaluation ride are accomplished within two weeks of the completion of Classroom Instruction.

5. Ensure that each rated and nonrated crewmember is provided:

    a. Student Read-Ahead 1 at least one week prior to the pretraining ride
    b. Student Read-Ahead 2 is provided upon completing the pretraining ride

6. Conduct the course as scheduled. Advise crewmembers to take notes on the Student Handout and to store their completed practical exercises in Section 2. Inform crewmembers that Sections 1 and 2 are theirs to take but that the remainder of the *Student Guide* must be returned. Answer all pertinent crewmember questions about the course prior to releasing them to comply with the simulator or flight schedule. Provide a telephonic contact point should any question arise subsequent to the course.

7. Ensure that an appropriate notation as to the completion of initial aircrew coordination training is made on each rated and nonrated crewmember's flight record.

Contents

Contents

Appendix A - Instructor Read-Ahead

About the Trainer
Course

About the Trainer Course

What you will find in this section:

- ☑ Course Description

- ☑ Training Aids Index

- ☑ Special Instructions

About the Trainer Course

.... Course Description ....

Training Activities

The Aircrew Coordination Trainer Course is a 51-hour course comprising five main parts:

1. **Course Introduction and Learning Objectives** (Section 1) - introduces the course and the instructors, provides administrative information, and defines the learning objectives for the course.

2. **Methods of Instruction** (Section 2) - consists of classroom instruction covering the instructional techniques necessary to teach aircrew coordination. MOI techniques for both classroom and simulator or flight presentations are provided to most effectively impart the crew coordination instruction to unit crewmembers. Unit instructors also will be taught the underlying structure of the Aircrew Coordination Course necessary to understand the evaluation techniques discussed later in the course.

3. **Aircrew Coordination Course** (Section 3/*Instructor Guide*, Section 3) - the Aircrew Coordination Course is conducted in its entirety ("Classroom Instruction" and "Simulator or Flight Training and Evaluation") to train the unit instructors in its presentation.

4. **Evaluation Procedures and Scenario Development** (Section 4) - conducted subsequent to the presentation of the Aircrew Coordination Course. Unit instructors will be instructed on the evaluation techniques used to measure the effects of aircrew coordination training and will be provided the information necessary to develop training scenarios based on the unit Mission Essential Task List (METL).

5. **Scenario Familiarization and Evaluation** (Section 5) - instructors will be familiarized with the type of simulator or flight scenarios best suited for the hands-on portion of the Aircrew Coordination Course. Unit instructors will fly one training ride as students and one ride as evaluators/operators. Each ride consists of 1.5 hours planning, 1.75 hours simulator or aircraft, and 1.75 hours after-action review. To minimize delays in course presentation due to simulator or aircraft scheduling problems, scenario familiarization and evaluation is scheduled last.

Course Data

1. Target Audience

    a. Instructor pilots (IPs),

    b. Unit trainers (UTs), and

    c. Simulator instructor operators (IOs)

2. Class Frequency: As required

3. Class Size

    a. 8 to 12 personnel optimal

    b. Small class size allows for more personal involvement; also, attitudinal changes are best effected in small groups.

4. Training Instructor Requirements

Category	Number	Duty
IP	1	Course Supervisor
IP/UT	2	Academic instructors*
IP	2	Evaluators**

    * UTs may be used if IP assets are insufficient; however, UTs may not formally evaluate crews.

    **Actual number may vary based on evaluation ride requirements.

    Note: Training efficiencies may be realized by team teaching.

5. Course Length: 51 hours total

    a. Methods of Instruction: 2 hours

    b. Aircrew Coordination Course: 38 hours

    c. Evaluation Procedures and Scenario Development: 5 hours

    d. Scenario Familiarization and Evaluation: 6 hours

Uniform

1. Academic: Duty

2. Simulator or Aircraft: Flight

Training Aid	ID Number	Description
Viewgraphs	(T-VG)	
	01	Aircrew Coordination Trainer Course
	02	Introduction
	03	Aircrew Coordination Trainer Course Structure
	04	Learning Objectives of the Aircrew Coordination Trainer Course
	05	Learning Objectives
	06	Methods of Instruction
	07	Aircrew Coordination Course Structure
	08	Crew Coordination Model
	09	Crew Coordination in Army Aviation Graphic
	10	Framework for Understanding the Aircrew Coordination Course
	11	ATM Crew Coordination Elements
	12	(Continued)
	13	Aircrew Coordination Basic Qualities
	14	(Continued)
	15	(Continued)
	16	Relationship of Crew Coordination Objectives
	17	Cross-walk Chart
	18	Crew Coordination Evaluation
	19	Instructor Guide
	20	(Continued)
	21	(Continued)
	22	Appendices
	23	Student Guide
	24	Appendices
	25	Case Studies
	26	Videotape
	27	Small Group Exercises
	28	Facilitating
	29	Simulator or Flight MOI
	30	Scenarios
	31	Initial Aircrew Coordination Training Scenarios
	32	Mission Planning and Rehearsal
	33	Crew-Level After-Action Reviews
	34	Ten Laws of Teaching
	35	(Continued)
	36	About the Aircrew Coordination Course
	37	Evaluation Procedures and Scenario Development
	38	Aircrew Coordination Evaluation

Training Aid	ID Number	Description
Viewgraphs	(T-VG)	
	39	Instructor Operators
	40	Unit Instructors
	41	Aircrews
	42	Schedule for Scenario Training and Evaluation
	43	Duties
	44	(Continued)
	45	(Continued)
	46	(Continued)
	47	Use of the Aircrew Coordination Evaluation Materials
	48	Aircrew Coordination Evaluation Guidance
	49	Aircrew Coordination Evaluation Exercises
	50	Grade Slips
	51	(Continued)
	52	(Continued)
	53	(Continued)
	54	Aircrew Coordination Evaluation Workshop
	55	(Continued)
	56	Evaluation Specifics
	57	Evaluator Activities
	58	Unit Continuation Training Aircrew Coordination Evaluation
	59	Scenario Development Guidelines
	60	(Continued)
	61	Simulator and Aircraft Scenarios
	62	(Continued)
	63	(Continued)
	64	Scenario Development Procedures
	65	Table F-1
	66	(Continued)
	67	Segment 2
	68	Scenario Materials
	69	Audio-Visual Support
	70	Table 4-2
	71	Scenario Familiarization and Evaluation
Videotape	(VT)	
	01	"Attention Getter" (AH-1 Brown-out)
	02	Ketchikan
	03	Mission Plan (CH-54)

Training Aid	ID Number	Description
Videotape	(VT)	
	04	Fast Rope (UH-60)
	05	Rappelling (UH-1)
	06	Eastern 401
	07	Airport
	08	Mid-air (UH-60)
	09	High Risk (OH-58)

1. General

a. In conducting the Aircrew Coordination Trainer Course, instructor(s) will use the slides, overheads, videotape, handouts, and other training materials.

b. The Aircrew Coordination Trainer Course is provided to unit instructors who will conduct the Aircrew Coordination Course. It is targeted for IPs, UTs, and other trainers, such as installation simulator facility IOs. To present the Aircrew Coordination Course, instructors must know the instructional material in depth, as well as the underlying concepts of the course and the most effective instructional methods to use (Section 2 - Methods of Instruction).

c. The Aircrew Coordination Course presents a dual challenge to instructors. They must teach the Classroom Instruction portion of the course (*Instructor Guide,* Section 3), and they must present the aircrew coordination requirements contained in the appropriate ATM during conduct of situational training exercises (STXs) in the simulator or aircraft. It is recommended that the unit METL be used to develop unit-specific STXs to maximize training benefits. Suggested guidelines for preparing scenarios and example scenario materials are provided in the *Instructor Guide,* Appendix F. Scenario development (Section 4) and familiarization training (Section 5) will be conducted during the Trainer Course.

d. In addition to their teaching role, unit instructors will be trained to evaluate the implementation of aircrew coordination by unit aircrews. The training will provide instruction covering evaluation materials consisting of modified grade slips and aircrew rating instructions (Section 4). Exercises will be conducted during the Trainer Course to provide practice with the evaluation materials and to foster a consistent, standardized approach to evaluations.

2. Classroom Arrangement: The "horseshoe" layout with the instructor at the open end has been found to be most effective for this type of training.

3. Simulator or Flight Periods: *For best results, simulator or flight periods should be flown within one week: a) prior to beginning the MOI section of the Trainer Course, b) after completing the Classroom Instruction portion of the Aircrew Coordination Course, and c) after completing the Scenario Familiarization and Evaluation section of the Trainer Course.*

4. Examination: There is no formal written examination for the Aircrew Coordination Trainer Course; however, unit instructors should be monitored by flight standardization personnel to ensure that training and evaluation are uniform.

5. Scheduling

    a.   Aircrew Coordination Trainer Course events should be scheduled in the following order:

        (1)   Pretraining ride, Aircrew Coordination Course

        (2)   Methods of Instruction, Aircrew Coordination Trainer Course

        (3)   Aircrew Coordination Course (less pretraining ride)

        (4)   Evaluation Procedures and Scenario Development

        (5)   Scenario Familiarization and Evaluation

    b.   For most effective results, training should be scheduled for no more than six hours per day with attendees excused from all duties during the course.

    c.   Depending on classroom and simulator or aircraft availability, it is recommended that the entire instructional package be taught consecutively within 10 training days for 8 unit instructors. Additional instructors will increase the number of training days required. Table 1 shows the overall Trainer Course flow; Table 2 shows the simulator schedule (aircraft times will approximate the simulator schedule); Table 3 describes the rides in the Aircrew Coordination Course.

Table 1. Aircrew Coordination Trainer Course Flow

(Basis: 8 Unit Instructors/1 Dedicated Simulator or Aircraft)*

Time	Event									
0630 - 0730	Pretraining Ride (ACC)					①	②	Ⓔ		Practice Evaluation (ACTC)
0730 - 0830		MOI (ACTC)	Classroom Instruction	Classroom Instruction	Classroom Instruction				Evaluation Procedures & Scenario Develop. (ACTC)	
0830 - 0930		MOI (ACTC)	Classroom Instruction	Classroom Instruction	Classroom Instruction				Evaluation Procedures & Scenario Develop. (ACTC)	
0930 - 1030		Classroom Instruction (ACC)	Classroom Instruction	Classroom Instruction	Open / Training Ride 1 (ACC)	Training Ride 2 (ACC)	Evaluation Ride (ACC)		Scenario Fam & Eval (ACTC)	
1030 - 1130		Classroom Instruction (ACC)			Training Ride 1 (ACC)	Training Ride 2 (ACC)	Evaluation Ride (ACC)		Scenario Fam & Eval (ACTC)	
1130 -1300	*L U N C H*									
1300-1400		Instruction (ACC) (Cont.)	Classroom Instruction (Cont.)	Classroom Instruction (Cont.)				Open	Open (Study Time)	
1400 - 1500		Instruction (ACC) (Cont.)	Classroom Instruction (Cont.)	Classroom Instruction (Cont.)				Evaluation Procedures & Scenario Develop.	Open (Study Time)	
1500 - 1600		Open	Open	Open				Evaluation Procedures & Scenario Develop.	Open (Study Time)	
1600 - 1645		Open	Open	Open				Open	Open (Study Time)	
Training Day	1	2	3	4	5	6	7	8	9	10

ACC   - Aircrew Coordination Course
ACTC - Aircrew Coordination Trainer Course

*Additional unit instructors will extend the training days w/o additional simulators/aircraft

Table 2. Aircrew Coordination Training Simulator Schedule

	Premission Planning 1.5 hrs	Simulator Time 1.75 hrs	After-Action Review 1.75 hrs
Crew 1	0630 - 0800	0800 - 0945	0945 - 1130
Crew 2	0815 - 0945	0945 - 1130	1130 - 1315
Crew 3	1000 - 1130	1130 - 1315	1315 - 1500
Crew 4	1145 - 1315	1315 - 1500	1500 - 1645

Table 3. Simulator or Flight Training Rides

Ride	Description	Remarks
1	Pretraining	"Baseline" ride
2	Training	"Crawl" ride
3	Training	"Walk" ride
4	Evaluation	"Run" ride

1 - Course Introduction
and Learning Objectives

1 Course Introduction and Learning Objectives

What you will find in this section:

☑ Introduction

☑ Learning Objectives for the Trainer Course

1

Course Introduction and Learning Objectives

01+00, T-VG 01/02

.... **Introduction** ....

1. Subject: Aircrew Coordination Trainer Course

2. Instructor(s): (Names and subjects; qualifications)

3. Administrative Announcements

    •   Sign-in roster

    •   Schedule

    •   Latrines

    •   Phones or message center

    •   Food and drink arrangements

    •   Instructional materials (Ensure all students are on page 1-1 of the *Instructor Guide* to begin note taking)

    Note: Play video accident "attention-getter" at this point. Following the video, stress that the prevention of such accidents and improvement of combat mission effectiveness is why we are here; that many of the accidents on record had nothing to do with material failure or the skills of the individual aviator but resulted from a failure of crewmembers to coordinate cockpit tasks for which they may or may not have been assigned responsibility. Explain that the primary purpose of the course is to prepare the attending instructors to conduct the Aircrew Coordination Course, which will provide unit aircrews with the crew coordination principles and techniques to eliminate crew coordination errors and maintain crew effectivenss.

    Note: Use the same attention-getter at the appropriate time when presenting the Aircrew Coordination Course.

T-VG 03

4.   Aircrew Coordination Trainer Course Structure

    a.   MOI for Classroom Instruction and Simulator or Flight Training and Evaluation portions of the Aircrew Coordination Course (2 hours)

    b.   The Aircrew Coordination Course (38 hours)

    c.   Evaluation Procedures and Scenario Development (5 hours)

    d.   Scenario Familiarization and Evaluation (6 hours)

T-VG 04

.... **Learning Objectives of the Aircrew Coordination Trainer Course** ....

1. Terminal Learning Objective: Upon completion of training, unit instructors will be able to present and evaluate US Army crew coordination training.

T-VG 05

2. Learning Objectives: Upon completion of training and using all furnished materials, unit instructors, without error, will be able to:

   a. Describe the underlying structure of the Aircrew Coordination Course.

   b. Employ the correct methods of instruction (MOI) for each portion of the Aircrew Coordination Course.

   c. Present the Classroom Instruction portion of the Aircrew Coordination Course to unit crewmembers (rated and nonrated).

   d. Conduct the mission-oriented Simulator or Flight Training and Evaluation portion of the Aircrew Coordination Course to reinforce the crew coordination principles learned in the classroom.

   e. Evaluate the ability of unit crewmembers (rated and nonrated) to utilize crew coordination principles to achieve safe, effective, and efficient mission accomplishment. (IPs only)

Methods of Instruction

What you will find in this section:

☑ General Information

☑ Framework for Understanding the Aircrew Coordination Course

☑ Training Materials Organization

☑ Teaching Aids, Exercises, and Practice Opportunities

2

Methods of Instruction

01+10

Methods of instruction for understanding and presenting the Classroom Instruction and Simulator or Flight Training and Evaluation portions of the Aircrew Coordination Course to rated and nonrated crewmembers (2 hours).

.... **General** ....

T-VG 06

Methods of Instruction (MOI) prepares unit instructors to conduct the Classroom Instruction and simulator or flight portions of the Aircrew Coordination Course.

MOI instruction consists of 2 hours covering the unique features of the Aircrew Coordination Course and recommended techniques for presenting the material to the students.

T-VG 07

Aircrew Coordination Course Structure

1. Classroom Instruction (*Instructor Guide*, Section 3) (18 hours)

2. Simulator or Flight Training and Evaluation (*Instructor Guide*, Section 3) (20 hours)

3. Framework Provided for Logical Flow of Subject Matter

   • Other aircrew coordination courses provide subjects in no particular order for use in the aviation environment. Subjects such as situational awareness may appear fourth in order of discussion, or eighth, depending on the course. Some . subjects, such as team building, are not discussed at all.

T-VG 08 (1)

   • This Aircrew Coordination Course provides a framework within which to discuss various subjects in a logical flow—as they would occur in the cockpit. This order is portrayed by the Crew Coordination Model (discussed in detail later), which depicts the crew coordination functions of Plan, Assess, Resolve,

and Execute. The Crew Coordination Model is partially represented in the Crew Coordination Logo (show logo).

T-VG 09 (1)

- Another important organizer is the Crew Coordination in Army Aviation graphic, which depicts the structure of the Aircrew Coordination Course. Central to the course structure are the ATM tasks, the Crew Coordination Basic Qualities, and the Crew Coordination Objectives, all of which will be covered during the Aircrew Coordination Course.

- Using this framework, it is now possible to place, or "glue," a given subject into the flow; e.g., plan a VFR flight (ATM Task 1001) is taught under the Basic Quality, "Premission planning and rehearsal accomplished," which, in turn, comes under the Crew Coordination Objective of "Mission Planning and Rehearsal," an objective central to the "Plan" function.

4. The Aircrew Coordination Course covers the historical background leading to its development; and the relationship between the Aircrew Training Manual (ATM) Crew Coordination Elements, the Crew Coordination Basic Qualities, and the Crew Coordination Objectives. Further, each Basic Quality will be defined, discussed in terms of supporting subjects, described in terms of performance criteria, and exemplified through use of actual Army aviation case studies.

T-VG 10

Framework for understanding the Aircrew Coordination Course.

T-VG 11

1. ATM Crew Coordination Elements form the basis for crew accomplishment of ATM tasks.

    - Crew coordination is built into the ATM tasks as a result of past research.

    - Evolved from US Army Safety Center and US Army Research Institute accident analysis.

    - Results of the analysis will be covered during the Aircrew Coordination Course.

2. ATM Crew Coordination Elements emphasize the interaction of crewmembers (communications) and actions (sequence and timing) to accomplish the ATM task to standard.

    - Will define crew coordination during the Aircrew Coordination Course.

    - "Communications" and "sequence and timing of actions" are stressed in the definition of crew coordination.

    - Crew coordination task-specific standards are in the ATM.

3. Tells aircrews what is expected of them and how they will be evaluated.

T-VG 12

4. ATM Crew Coordination Elements (Chapter 1, TC 1-210; Chapter 6, applicable ATM).

    Note: Will define ATM Crew Coordination Elements during the Aircrew Coordination Course.

    a. **Communicate positively**

    b. **Direct assistance**

    c. **Announce actions**

d.   Offer assistance

e.   Acknowledge actions

f.   Be explicit

g.   Provide aircraft control and obstacle advisories

h.   Coordinate action sequence and timing

- Perform at the ATM task level but evaluate crew coordination in terms of both the 1) ATM task performance and 2) the applicable Basic Quality.

T-VG 13

5.   Aircrew Coordination Basic Qualities are used to assess the utilization of crew coordination principles by the aircrew. Collectively, the Basic Qualities indicate the achievement of the Crew Coordination Objectives.

a.   The Basic Qualities are a mission-level instead of a task-level look at ATM task performance; i.e., considers the "synergistic" effect of crew communications and actions.

- Synergism is the ability of two individuals to combine their talents to perform at a level beyond that of each individual alone.

- Effect is considered across many tasks over a period of time.

- Overall effectiveness is in terms of mission performance; e.g., mission accomplished, objectives met, commander's intent complied with, equipment undamaged, crews not unduly exposed to risk.

- Like a sheet of music, ATM tasks are the "notes," overall performance in terms of Basic Qualities provides the "melody."

b.   Will measure Basic Qualities using techniques discussed during the evaluation portion (Section 4) of the Trainer Course.

c.   Some Basic Qualities may not map directly to an ATM task but can be observed with respect to an aircrew's attitude or behavior; e.g., crew climate, advocacy and assertion.

T-VG 14

    d.   Aircrew Coordination Basic Qualities are:

        (1)   Establish and maintain flight team leadership and crew climate

        (2)   Premission planning and rehearsal accomplished

        (3)   Application of appropriate decision making techniques

        (4)   Prioritize actions and distribute workload

        (5)   Management of unexpected events

        (6)   Statements and directives clear, timely, relevant, complete, and verified

        (7)   Maintenance of mission situational awareness

T-VG 15

        (8)   Decisions and actions communicated and acknowledged

        (9)   Supporting information or actions sought from crew

      (10)   Crewmember actions mutually cross-monitored

      (11)   Supporting information or actions offered by crew

      (12)   Advocacy and assertion practiced

      (13)   Crew-level after-action reviews accomplished

- Basically a new concept at the crew level

- Must instill the habit through crew coordination training

- Will discuss "how to" during the Aircrew Coordination Course

T-VG 08 (2)

6.   Crew Coordination Model Shows the Crew Coordination Objectives: (Relate to Aircrew Coordination Logo and the detailed graphic in *Student Guide*, Appendix G, p. G-23)

Note: Crew Coordination Objectives will be defined in the Aircrew Coordination Course.

   a.   **Establish and Maintain Team Relationships**

   b.   **Mission Planning and Rehearsal**

   c.   **Establish and Maintain Workload Levels**

   d.   **Exchange Mission Information**

   e.   **Cross-Monitor Performance**

7.   Crew Coordination Model Shows the Operator Functions:

   a.   **PLAN:** Planning element

   b.   **ASSESS:** Situation Awareness (SA) element

   c.   **RESOLVE:** Problem Solving and Decision Making (PS&DM) element

   d.   **EXECUTE:** Operational Task Execution (OTX) element

   e.   Replanning element

8.   The Crew Coordination Model shows the relationship of the Crew Coordination Objectives to the crew functions. Crew Coordination Objectives are:

T-VG 16

   a.   Behaviors taught to, and expected from, the aircrew(s)

   b.   Embedded throughout every mission flown in Army aviation

   c.   Not rated but captured from grade slip Basic Quality data

   d.   The core for the instruction in the Aircrew Coordination Course

      •   This is what makes Army crew coordination training different from all other courses, military or commercial.

- Army has defined what the crew coordination behaviors are and how they will be evaluated.

- Can instill these desirable behaviors in every Army aircrew.

9. As with the framework depicted by the logo discussed earlier, the Crew Coordination Model gives a logical flow to which crew coordination subjects may be "glued."

- Ask instructors for several subjects and "glue" them to the Crew Coordination Model.

T-VG 09 (2)

10. Interrelationship between the ATM task Crew Coordination Elements, Basic Qualities, and Crew Coordination Objectives.

- Crew Coordination in Army Aviation graphic shows the relationship of all crew coordination components. Go from detailed actions at the ATM Crew Coordination Element to broad concept with Crew Coordination Objectives.

T-VG 17

- Cross-walk Chart also shows the relationship of the Crew Coordination Objectives, Basic Qualities, and Crew Coordination Elements. Because the USASC ASMIS data base did not capture interpersonal relationships and crew climate information, the analysis leading to the definition of the Crew Coordination Elements resulted in elements that were only action or communication oriented. Basic Qualities such as "Establish and maintain flight team leadership and crew climate," therefore, do not map to the Crew Coordination Elements.

T-VG 18

11. The Army has undertaken a multi-year research program wherein crew coordination components have been defined and evaluation materials developed. Evaluation uses rating guides that embody crew coordination requirements (will discuss after presentation of the Aircrew Coordination Course).

- Major problem with other aircrew coordination courses is the lack of an evaluation procedure based on crew behavior and action.

- Many contend that crew coordination cannot be measured.

- Army research has shown that crew coordination can be measured and has revealed several interesting findings with respect to attitude, crew behavior, task performance, and how crew coordination affects mission performance.

02+00/T-VG 19

1.   Instructor Guide

    a.   Contents

    b.   Introducing the Instructor Guide (Review)

    c.   Course Introduction and Learning Objectives (Section 1)

    d.   Methods of Instruction (Section 2)

T-VG 20

    e.   Aircrew Coordination Course (Section 3)

        (1)   About the Aircrew Coordination Course

            (a)   Course Description

            (b)   Training Aids Index

            (c)   Special Instructions

T-VG 21

        (2)   Classroom Instruction

            (a)   Course Introduction and Learning Objectives

            (b)   The Aircrew Coordination Course is organized by ATM Crew Coordination Elements, Basic Qualities, and Crew Coordination Objectives.

            (c)   Remarks in the left margin of the lesson plan (page 3-11) provide time (e.g., 01+00 begins the first hour) and viewgraph (e.g., S-VG 01 for student viewgraph 1 of the Aircrew Coordination Course) information. Remarks in the lesson plan may also refer to background reading references or provide additional information for the instructor.

            (d)   Talking points are indicated by "bullets" (•)

        (3)   Simulator or Flight Training and Evaluation

f. Evaluation Procedures and Scenario Development (Section 4)

g. Scenario Familiarization and Evaluation (Section 5)

T-VG 22

h. Appendix A - Student Read-Aheads

Contains two read-aheads for issue to the students. The first read-ahead is issued at least one week prior to the pretraining ride, if possible. The second read-ahead is issued immediately after the pretraining ride. Both read-aheads contain information necessary for the student to be properly prepared for the training activities.

i. Appendix B - Case Study Discussion Guide

Contains the case studies referenced in the lesson body. Each case study narrative contains analysis points of discussion covering the Crew Coordination Objectives, Basic Qualities, and ATM Crew Coordination Elements illustrated by the case. Several cases are positive examples from the Broken Wing Award files of the US Army Safety Center (USASC) that exemplify outstanding application of crew coordination principles. Case study narratives, without discussion points, are included in Appendix D (*Student Guide*) for use by the students. *Be sure to cover the explanatory information in Appendix D before discussing the case studies.*

j. Appendix C - Aircrew Coordination Training Grade Slips

Contains the modified grade slips used during aircrew coordination initial training.

- Grade slips will be discussed during the Evaluation Procedures and Scenario Development portion of the Trainer Course (after presentation of the Aircrew Coordination Course).

- Have used as many familiar documents and procedures as possible to minimize change.

k. Appendix D - Aircrew Coordination Evaluation Workshop

Provides the practical exercises used to establish a consistent, standardized approach to evaluations. Criterion-referenced standards in the form of behavioral rating guides will be used to achieve objective evaluator ratings.

- Standards used to describe Superior (7), Acceptable (4), and Very Poor (1) performance.

- Interpolate to derive scores falling between the performance standards.

l. Appendix E - Aircrew Coordination Evaluation Process

Contains the process used by evaluation personnel in evaluating unit aircrews.

- Process will be discussed during the Evaluation Procedures and Scenario Development portion of the Trainer Course (after presentation of the Aircrew Coordination Course).

- Process is based on research work, which integrated the recommendations of the IPs and IOs working on the Aircrew Coordination project.

m. Appendix F - Scenario Guidance

Contains scenario guidelines and examples for scenario developers.

- Scenario guidance will be discussed during the Evaluation Procedures and Scenario Development portion of the Trainer Course.

n. Appendix G - Practical Exercises

Contains the practical exercises used in the Aircrew Coordination Course.

T-VG 23

2. Student Guide: Contains the Student Handout and general information the students need to better understand the Aircrew Coordination Course instructional materials.

a. Contents

b. Introducing the Student Guide

c. Student Handout (Section 1)

- White space for note taking

- Parallels instructor's lesson plan

- Includes detailed information such as the Crew Coordination Model, Cross-walk Chart, etc.

d.   Practical Exercises (Section 2) (Placeholder for the following PEs)

   (1)   The Stress Practical Exercise contains two tests to provide indication of personal stress.

   - Stress management is an important student building block for understanding the Aircrew Coordination Course materials.

   (2)   The Planning and Rehearsal Practical Exercise enables the students to practice prioritizing their planning and rehearsal actions to meet a time limited departure. They must also decide whether the actions listed must be done prior to takeoff or if they can be accomplished in the cockpit.

   (3)   The Hazardous Thought Pattern Practical Exercise contains self-administered exercises that may provide an indication of possible dangerous trends in decision making.

      - Exercises use the "forced choice" method of selection. *Emphasize the instructions in the exercise introduction to minimize student reluctance to make the forced choices.*

      - Understanding the notion of hazardous thought patterns is an important student building block for understanding several of the instructional components taught in the Aircrew Coordination Course; e.g., decision making techniques.

   (4)   The Communications Practical Exercise provides practice in using clear terminology to describe a tactical location.

      - The Stress and Hazardous Thought Pattern practical exercises may be done at home but will be reviewed in the first class of the following day.

      - The Planning and Communication practical exercises will be done in class.

T-VG 24

e.   Appendix A - Hangar Talk

   A place-holder for unit instructors to store recent FLIGHTFAX articles, other aviation-related publication articles, and short vignettes written by IPs covering accidents and aircrew coordination. By using this section, instructors will be able to create updated case studies to maintain currency with trends in Army aviation accidents.

- Course will be current through the publication/change date

- Provides source for cases that occur between course updates

f. Appendix B - Crew Coordination Errors: Definitions and Examples

Contains aviation accidents organized by the six aircrew coordination errors outlined in TC 1-210 and the ATMs. It provides another source for accident cases and a different point of view for selecting accidents to highlight Crew Coordination Objectives.

g. Appendix C - Selected Accidents by ATM Tasks

Provides aviation mishaps organized by the ATM task being performed immediately prior to the flight emergency. As with Appendix B, it provides another source and a different point of view in selecting accidents for discussion.

- With both Appendices B and C, the crew coordination aspects of the mishap must be derived by the students because the USASC accident data base has been primarily oriented to capture individual error information.

- With increased emphasis on crew coordination, crew error, as well as individual error, will be available from the accident data base.

h. Appendix D - Aircrew Coordination Case Studies

Contains the narratives of case studies that may be selected for discussion during the Aircrew Coordination Course. This section mirrors Appendix B of the *Instructor Guide*; however, instructor notes and analysis to identify Crew Coordination Objectives, Basic Qualities, and ATM Crew Coordination Elements are *not* provided in this appendix. Because of its design, this section is suitable student material for use in classroom discussions.

i. Appendix E - Aircrew Coordination Training Evaluation Guide

Contains the evaluation instructions under which students will be graded on ATM maneuvers and rated as to Basic Quality performance. A filled-in grade slip is provided to exemplify grades and ratings.

- Evaluation instructions will be discussed during the Evaluation Procedures and Scenario Development portion of the Trainer Course (after presentation of the Aircrew Coordination Course).

- Grading (S+, S, S-, U) is a modification of the current system; the rating system (1-7) is entirely new, but both have been field tested and proven to be easily used.

j. Appendix F - Simulator or Flight Mission Materials

Contains a listing of the materials required for the simulator or flight missions flown during the Aircrew Coordination Course. (Discuss materials)

k. Appendix G - Background Reading

Provides additional depth to the crew coordination topics discussed. Readings are cited in the lesson plan and the Student Handout for the Aircrew Coordination Course and should be assigned as outside reading. Instructors should introduce daily instruction by reviewing the outside reading assignments.

- (Transition point.) Described Appendix B (*Instructor Guide*) and Appendix D (*Student Guide*) as containing the case studies; but, why and how are the aircrew coordination case studies used in the course?

T-VG 25

1.   Case Studies (*Instructor Guide,* Appendix B and *Student Guide,* Appendix D)

   a.   Used to develop an understanding by the unit aircrews of the ATM Crew Coordination Elements, Basic Qualities, and Crew Coordination Objectives through participation in group exercises to analyze actual Army aviation accident cases.

   b.   Student analytical findings are used by the instructor to emphasize the importance of applicable crew coordination principles and how their use could have prevented the mishap.

   •   Use FLIGHTFAX and other aviation articles to provide current cases for discussion between course updates. (*Student Guide,* Appendix A)

T-VG 26

2.   Videotape

   a.   Video vignettes will be used to provide examples for evaluation purposes, to provide attention-getters, and to visually illustrate several of the case studies presented in *Instructor Guide,* Appendix B and *Student Guide,* Appendix D.

   •   Evaluation examples used in Trainer Course during Evaluation Procedures and Scenario Development (Section 4).

   •   Attention-getters and case study examples used in Aircrew Coordination Course.

   b.   Aircrew Coordination Course instructor will present the appropriate video vignette and then lead a discussion covering the crew coordination principles involved in the mishap.

   •   Video vignettes are arranged in the same order as the instructional materials in the Aircrew Coordination Course.

   •   Approximately 10 seconds of spacing is provided between video vignettes to provide breaks between cases.

   c.   Subsequent to the Trainer Course, the videotape will be provided to each graduate or as determined by USAAVNC.

T-VG 27

3. Small Group Exercises

    a. Employed to exemplify the formation of teams and the synergistic approach to mission accomplishment.

    b. Instructors are encouraged to develop role-playing and other activities to support the instruction as they become experienced in presenting the course.

    c. Basic element is the crew, both rated and nonrated members. May combine two crews to work a particular exercise but keep the basic crew intact.

T-VG 28

4. Facilitating

    a. Pretraining ride, case studies, practical exercise reviews, past experience, and instructional points may lead to animated discussions among the participating aircrews because they involve familiar areas and "there I was" types of experiences.

    b. Instructor must develop a "feel" for promoting discussions or, as appropriate, limiting them in order to remain on schedule.

    c. Remember this is a participatory type of course. A strict lecture mode instead of a good mix of lecture, discussion, and practical exercise will be *ineffective*.

T-VG 29

5. Simulator or Flight MOI

    a. Conduct training in simulator if at all possible

        (1) Standardization

        (2) Environmental, maintenance, and other effects mitigated

    b. Conduct in aircraft if:

        (1) No simulator exists

        (2) Simulator not effective for mission

c. Aircraft considerations

    (1) Seating and IP participation

- How does the IP role-play and evaluate concurrently?

- Initial flight training; in the unit?

    (2) Safety restrictions

- Overflying built-up areas; fly friendly

- Restricted altitudes, airspeeds

    (3) Environmental restrictions

- Wires and other obstacles

- Weather and associated hazards

T-VG 30

6. Scenarios (Familiarize during Scenario Familiarization and Evaluation instruction)

a. Scenario guidance is provided in Appendix F (*Instructor Guide*).

- Fixed and rotary wing considerations

- Level of training and mission complexity considerations

b. Simulator and flight materials required for scenarios are listed in Appendix F (*Student Guide*).

c. Terms "scenarios" and "situational training exercises (STX)" used interchangeably.

d. Scenarios should be based on the unit mission essential task list (METL).

- Do not use "canned" scenarios from the Installation Simulator Facility; modify them, as necessary, to reflect unit METL.

T-VG 31

e. Instructional progression for aircrew coordination initial training rides. (Crawl-walk-run)

(1) During the pretraining ride, the student crew will plan and fly a tactical mission-oriented scenario. This will allow the crew to participate in the type of mission flown in the course as well as to fly with a student buddy if not yet battle-rostered. (Baseline)

(2) During training ride 1, the instructor observes, evaluates, and provides instruction to reinforce crew coordination principles and ATM crew performance standards learned in the classroom. Feedback is provided frequently with a full critique following the crew-level after-action review. (Crawl)

(3) During training ride 2, the instructor will observe and evaluate; however, the crew will be expected to operate on its own. Subsequent to completing its crew-level after-action review, the instructor will provide feedback to the crew. (Walk)

(4) The third training ride will be evaluated to verify successful completion of aircrew coordination initial training. Remarks will be entered on the DA Form 759-1 for successful completion. (Run)

Note: On the third training ride, should battle-rostered aircrews successfully complete a properly constructed scenario evaluation based on the unit METL, units may consider award of the Crew Readiness Level (CRL) 1 rating.

Note: Units may choose to add a fifth ride, which may precede or follow the evaluation ride. This optional ride should be in the appropriate aircraft under NVG or with a student crew not having previously flown together in the course.

Note: Mixing crewmembers on the optional ride will show the standardization advantages of crew coordination training. This aspect is extremely important when battle-rostered crewmembers are unable to fly together and other crew coordination trained individuals are available.

f. Continuation training aircrew coordination scenarios

(1) Instructor observes and evaluates

(2) Crew will be issued/reissued a Crew Readiness Level (CRL) rating

T-VG 32

7. Mission Planning and Rehearsal

a. Major contributor to mission success

b. A simple fact: Crews that plan better perform better

- Based on research findings

- Crews that planned and rehearsed achieved better mission performance

c. "Commander's Intent" very important and must be stressed

d. Teach mission segment-by-segment analysis

e. Involve the entire crew

f. Crew-level mission briefing ties the plan together for all crewmembers

g. Utilize concepts such as the shared common understanding of the mission and the recognition of situationally dependent time constraints to enhance safety and improve mission effectiveness.

- Shared common understanding means every crewmember knows what the mission objectives are, how they will be achieved, and what part each crewmember plays in accomplishing the mission.

- Time constraints refer to being ahead or behind the aircraft. When actions are occurring rapidly, must stay ahead of the aircraft by increasing our time factor; e.g., warn of an impending checkpoint 30 seconds ahead instead of only 10 seconds.

T-VG 33

8. Crew-Level After-Action Reviews

a. The routine performance of crew-level after-action reviews must be instilled for individual crews.

- Is done for multi-aircraft mission and training exercises; need to extend to the crew level.

b. Important from lessons-learned aspect.

- Will discuss in conjunction with the formation of effective crews.

c. Embodies such concepts as critique, inquiry, advocacy, assertion, feedback, reinforcement, confirmation, and team building.

T-VG 34

9. The Ten Laws of Teaching

    a. The Law of Reduction

- Reduce to one liners where possible

- Be concise; eliminate non-essential material

    b. The Law of Expansion

- Explain vague or unfamiliar terms

- Clarify the unclear; illustrate with real-life examples where possible

    c. The Law of Color

- Unique personal examples

- Illustrations that bring light!

    d. The Law of Anchor

- Premise, then relativity

- Attach ideas to experience

    e. The Law of Transition

- Alert listeners to change

- Verify change by questioning

T-VG 35

    f. The Law of Pace

- Theme, departure; theme, departure; ....

- Heavy, light; heavy, light; ....

- Rapid, slow; rapid, slow; ....

g. The Law of Humor

- Defuse tension

- Ensure relativity to subject

h. The Law of Word Usage

- Assume nothing as to understanding

- Local slang ("wicked" bad!)

- Impressive words (teacher vs. pedagogue)

- Scare words (emotional, e.g., checkride, FEB, RIF)

i. The Law of Projection

- Tone of voice

- Inflection

- Volume

j. The Law of Summary

- Emphasize important points

- Summarize covered material by block

- Summarize coming material to create interest

T-VG 36

Note: Prior to conducting the Aircrew Coordination Course, review the Course Description, Training Aids Index and Special Instructions with the unit instructors. After the review, present the Aircrew Coordination Course as it would be presented to unit aircrews. Unit instructors should take notes in their Instructor Guide (Section 3) and not on the Student Handout in the Student Guide.

3 Aircrew Coordination Course

Please turn to Section 3 of the Instructor Guide at this time.

3

Aircrew Coordination Course

Please turn to Section 3 of the *Instructor Guide* at this time.

4

Evaluation Procedures and Scenario Development

What you will find in this section:

☑ Evaluation of Aircrew Coordination

☑ Evaluation of Aircrew Coordination Continuation Training in Units

☑ Scenario Development Guidelines

4

Evaluation Procedures and Scenario Development

21+00/T-VG 37

Evaluation Procedures for Assessing Aircrew Coordination Performance and Guidelines for Developing Scenarios (5 hours)

.... Evaluation of Aircrew Coordination ....

T-VG 38

1. General

   a. Success of the Aircrew Coordination Program is linked to the objectivity of the evaluations performed by the unit instructor.

   b. Evaluations are critically dependent on nonbiased observations of aircrew performance. This is achieved through the use of criterion-referenced standards contained in rating guides, which define Superior, Acceptable, and Very Poor performance for each of the Basic Qualities (*Student Guide*, Appendix E).

   c. Both technical flight and crew coordination skills will be evaluated during the Aircrew Coordination Course.

   • Let's look at how to organize to accomplish the evaluation aspects of crew coordination training.

2. Organization for Simulator or Flight Scenario Training and Evaluation Conducted During the Aircrew Coordination Course (*Instructor Guide*, Section 3)

T-VG 39

   a. Instructor Operators (IOs)

      (1) Full-time IOs should be used where possible for crew coordination simulator training.

      (2) IOs should be provided aircrew coordination familiarization training prior to supporting the aircrew coordination training courses.

(3)   IOs should not operate the simulator and evaluate a crew simultaneously.

- Experience has indicated that the simulator operator should perform solely as an IO and not as an instructor evaluator.

T-VG 40

b.   Unit instructors

(1)   IPs should be provided by the participating aviation units to instruct, evaluate, and operate the simulator (full-time IOs not available).

(2)   Where unit assets cannot support required numbers of IPs, UTs may conduct Classroom Instruction and administer the pretraining and two training rides. The evaluation ride (fourth ride) must be evaluated by an IP.

(3)   Where possible, unit instructors should train and evaluate aircrews assigned to their own organization.

(4)   Unit instructors must be trained in aircrew coordination instructional and evaluation techniques prior to conducting simulator or flight evaluation operations for initial or continuation training.

T-VG 41

c.   Aircrews

(1)   Crewmembers should be battle-rostered and assigned as a crew to perform simulator or flight missions during the Aircrew Coordination Course.

(2)   Where battle rostering is not accomplished, designated Pilots-in-Command (PC) will be paired with pilots from their units with whom they would normally fly. This pairing should remain the same for the duration of the course. PCs should not be paired together, if possible. Pairing of pilots is the least desirable.

T-VG 42

3.   Schedule for Simulator or Flight Scenario Training and Evaluation

a.   Simulator or flight periods, other than the pretraining ride, should not be scheduled prior to completion of the Classroom Instruction portion of the Aircrew Coordination Course (*Instructor Guide*, Section 3).

b.   Aircrew reporting time to the Simulator Facility or flight line should be 1.5 hours prior to the mission start time; i.e., 0800 crew reports at 0630.

c. Instructors should report at least one-half hour prior to their assigned aircrew, i.e., 2 hours prior to the mission start time, to ensure that they are prepared to begin instruction and observation upon the aircrews' arrival.

d. IOs should report at their regularly assigned reporting time (civilian IO) or at least 1/2 hour before the simulator period (military IO).

e. Actual schedule will be prepared by the instructor and distributed to the training aircrews after coordination with the simulator facility or flight operations, as appropriate.

- Instructor prepares simulator or flight training schedule based on attendees and simulator facility availability of cockpits.

- Schedule must be prepared prior to the Simulator or Flight Training and Evaluation portion (Hour 19).

- Brief attendees on the schedule and post a copy in a prominent location.

T-VG 43

4. Duties

a. IO duties

(1) Operate the simulator.

(2) Insert preplanned messages and events into the scenario at the appropriate times using the IO script provided by the instructor (*Student Guide*, Appendix F).

(3) Answer all normal aircrew requests for assistance and act as crew chief, Air Traffic Control (ATC), backup navigation, etc.

(4) Standard debrief of the simulator mission is not required.

T-VG 44

b. Instructor duties

(1) For simulator periods, coordinate with the IO to select the appropriate scenario.

- Scenario development guidance is provided in Appendix F (*Instructor Guide*).

(2) Obtain the necessary training materials for the selected scenario and prepare the student packet.

- Simulator and flight training materials are listed in Appendix F (*Student Guide*).

(3) Meet, greet, and brief the aircrew; issue the student packet of training materials.

- Evaluation process is provided in Appendix E (*Instructor Guide*).

(4) Observe and instruct or evaluate the aircrew during their premission planning and rehearsal activities.

(5) Observe and instruct or evaluate the aircrew from the jump seat position during the simulator or flight mission; or perform as a crewmember in those aircraft having only two-place seating or no visual-capable simulator.

T-VG 45

(6) Observe and instruct or evaluate the aircrew during their crew-level after-action review.

(7) Using observation notes and a video or audio tape of the mission, if recorded, conduct a review of the simulator or flight period to:

(a) Allow and encourage aircrew members to self-critique themselves in a supportive, candid atmosphere

(b) Emphasize instances of good aircrew coordination during the premission planning, mission execution, and crew-level after-action review activities

(c) Constructively point out instances of poor aircrew coordination and the crew coordination principle(s) that should have been used to correct the situation

(d) Summarize the overall conduct of the mission from the aircrew coordination aspect and reemphasize the safety and mission effectiveness benefits of employing crew coordination principles

(8) Release the aircrew. This completes one training and evaluation cycle for the aircrew. Repeat cycle for each additional aircrew.

c. Aircrews

(1) Complete premission planning using the materials provided in Appendix F (*Student Guide*).

(2) Plan the simulator or flight mission as it would be planned for an actual mission. Include any mission information provided by the IP during the initial briefing. For simulator missions, all support services normally provided during an actual flight will be provided by the IO; e.g., crew chief, ATC, backup navigation, etc. All required briefings must be accomplished.

(3) Employ crew coordination techniques learned in the classroom during *all* phases of the simulator or flight period.

(4) Participate in the instructor critique of the simulator or flight period. Use this activity to practice the application of crew coordination techniques by querying fellow crewmembers and the instructor, advocating certain positions taken, resolving any disagreements surfaced, and by positively contributing to the learning experience gained by all participants in the mission.

22+00

- Now that the duties and responsibilities of the key training personnel have been assigned, how do they use the evaluation materials to measure crew coordination? We will now look at these materials and their use.

T-VG 47

5. Use of the Aircrew Coordination Evaluation Materials

a. Aircrew Coordination Training Grade Slips (*Instructor Guide*, Appendix C)

(1) Description

(a) Battle-Rostered Crew Evaluation/Training Grade Slip (DA Form 7121-R)

(b) Aircrew Coordination Training Grade Slip

(2) Expanded grading system

(a) Grade covers individual skills and crew coordination aspects

(b) Grading system uses S+, S, S-, and U

(c) Basic Quality also cited for S- or U

Note: Not limited to two Basic Qualities; cite any and all that apply.

(d) Overall rating of Basic Qualities

(3) Record keeping

(a) Chapter 3, TC 1-210

(b) Chapter 8, appropriate ATM

T-VG 48

b. Aircrew coordination evaluation guidance (*Student Guide,* Appendix E)

(1) Considerations

- Objective and reliable evaluations

(2) Guidance

- Grade slips and expanded grading system

- Effectiveness factors as aid to review classroom training and align classroom topics with Basic Qualities

(3) Scales

- Seven-point scale to evaluate crew's performance of Basic Qualities

(4) Aircrew Coordination Basic Qualities and rating anchors

T-VG 49

6. Aircrew Coordination Evaluation Workshop Exercises (*Instructor Guide,* Appendix D)

a. Experience in using the evaluation tools

T-VG 49 (Off)

(1) Aircrew Training Manual (ATM) for standards

(2) Grade slips (*Instructor Guide*, Appendix C)

- Cover changes from the ATM grade slips

- Cover grading system entries

(3) Evaluation guidance (*Student Guide*, Appendix E)

- Expanded grading system

- Grade slips (filled in)

- Rating factors

- Rating scale

- Behavioral anchors

b. Consistent Ratings

(1) Objective (criterion-referenced standards)

- Performance against a standard

(2) Behavior-based criteria and rating anchors

- Define Superior, Acceptable, and Very Poor performance

(3) Guard against norm-referenced excursions

- Must not compare performance between aircrews

c. Aircrew Coordination Evaluation Workshop (2 hours)

(1) Organize into 4 to 5 person groups

(2) Introduce case study (script or video segment)

(3) Practice evaluating performance

- Grade crew performance of ATM task (S+, S, S-, or U)

- Identify Basic Quality(ies) contributing to ATM task grade (1, 2,...13)

- Rate contributing Basic Quality(ies) (1, 2...7)

- Assign summary rating to all Basic Qualities

- Grade crew on overall mission accomplishment

(4) Allow adequate time for discussion and evaluation

T-VG 55

(5) Poll the groups for grades at the ATM task level first; after agreement on ATM task level evaluations, poll groups for Basic Quality ratings.

(a) Discuss flight skills versus aircrew coordination contributions to the task grade.

(b) Refer groups to the criterion-referenced descriptions and rating anchors for the Basic Qualities contained in the Evaluation Guide.

(6) Achieve a group pattern of agreement before proceeding to the next case study.

(7) Workshop should not extend beyond a two-hour period or require more than 4-5 case studies to approach consistent agreement.

7. Evaluation Process (*Instructor Guide*, Appendix E)

T-VG 56

a. Evaluation specifics

- All aircrew coordination training flights are graded

- Four simulator or aircraft flights

  - One pretraining evaluation flight with IP (observe and evaluate)

  - Two training flights with UT or IP (observe and instruct)

  - One course completion evaluation flight with IP (observe and evaluate)

- Consistent use of the Evaluation Guide

T-VG 57

b. Evaluator activities for training and evaluation rides

- Greet crew and explain nature of flight

- Issue mission materials and information then instruct (observe) and evaluate premission planning and rehearsal

- Instruct (observe) and evaluate mission execution during the flight

- Instruct (observe) and evaluate crew-level after-action review

- Debrief the crew

- Finalize all records and retrieve training materials

Evaluation of Aircrew Coordination Continuation Training in Units

1. Evaluation criteria for aircrew coordination continuation training is the same for both initial and refresher training. It is essential that evaluators measure crew coordination skills based on the evaluation guidelines for the Aircrew Coordination Basic Qualities presented in this exportable training package (*Student Guide*, Appendix E).

2. Evaluation of crew coordination requires a conscientious assessment of how well crews perform to successfully accomplish assigned missions.

3. Uniform, objective ratings are crucial to the assessment of the actual crew coordination training status of unit aircrews.

   Note: Refer to the Crew Coordination Exportable Evaluation Package for additional evaluation tools and techniques (for example, Evaluator Worksheets, mission performance measures).

4. Crew performance of ATM tasks and battle drills ties directly into the collective tasks, which make up a unit's ARTEP Mission Training Plan (MTP). Unit commanders should designate specific crew tasks essential to accomplishing unit missions. Crew scores on MTP tasks can help determine the overall level of the unit's crew coordination training.

Scenario Development Guidelines

1. General (*Instructor Guide*, Appendix F)

   a. Aircrew coordination training program scenarios

      (1) Focus on the unit's mission essential task list (METL)

      (2) Implement the guidance for crew training contained in TC 1- 210, "Aircrew Training Program, Commanders Guide to Individual and Crew Training," and the appropriate aircraft Aircrew Training Manual (ATM)

      (3) Involve battle-rostered crews

      (4) Emphasize crew tasks developed as a part of the unit's collective training program

   b. Scenarios should be conducted in flight simulators, when available. It is highly recommended that the simulator be equipped with video recording capability.

   c. Scenarios should include common missions for the type of aviation unit and mission types of aircraft assigned to the unit.

   d. Scenarios should include tasks that require the aircrew to coordinate, both internally and externally, to successfully accomplish the mission.

      (1) Terrain flight

      (2) Threat avoidance

      (3) Instrument flight

      (4) Weapons engagements

      (5) External loads

      (6) Emergencies and other abnormal events that emphasize crew coordination rather than individual aviator skills.

   e. Simulator or flight scenario training should be conducted within a two-week period following aircrew coordination Classroom Instruction.

f. The Aircrew Coordination Training Grade Slip (*Instructor Guide*, Appendix C) will be used during scenario training.

T-VG 61

2. Simulator and Aircraft Scenarios

a. Instructors who conduct the aircrew coordination training should develop at least two simulator scenarios or two situational training exercises (STXs) for aircraft without flight simulators. When available, pre-planned scenarios developed by the supporting simulator facility may be used if modified to reflect tasks on the unit's METL.

b. Each scenario or STX should require approximately 5.0 hours to complete.

   (1) 1.5-hour premission planning phase

   (2) 1.75-hour flight phase

   (3) 1.75-hour crew-level after-action review phase

c. Unexpected events that require crew coordination should be incorporated into the pre-planned scenarios and STXs within acceptable risk criteria.

   (1) Inadvertent entry into instrument meteorological conditions and any necessary instrument approaches

   (2) Aircraft emergencies

   (3) Nonroutine mission changes

T-VG 62

d. Scenarios and STXs should be based on the crawl-walk-run philosophy and should be tailored to the appropriate level of unit proficiency.

   (1) During the day

   (2) At night using night vision devices (NVD)

   (3) In mission-oriented protective posture (MOPP)

   (4) In electronic warfare (EW) conditions

e. If feasible, the scenario periods should be recorded on video and/or audio tape. Aviation maintenance support should be consulted to resolve any airworthiness issues.

(1) Premission planning phase (videotape)

(2) Flight phase (audio or videotape)

(3) After-action review phase (videotape)

T-VG 63

f. STXs conducted in aircraft with two-place configurations will place additional burdens on IPs and UTs

(1) Perform duties as evaluators and trainers

(2) Perform duties as crewmembers (role-play)

- "In all phases of instruction and evaluation, the evaluator is expected to perform as a crewmember in good faith."

- *"The (student) examinee must know that he is being supported by a fully functioning crewmember."*

T-VG 64 (On)

3. Scenario Development Procedures and Materials

a. Each aircrew coordination training scenario, whether executed in a simulator or in an aircraft, should be well thought through and relevant to the unit being trained.

b. The following development steps and information sources provide a start point and approach for the scenario developer.

T-VG 64 (Off)

T-VG 65/66 (On)

(1) Select a common tactical mission(s) (Sources: Unit OPLANs; FMs; ARTEP MTPs; Table F-1, Missions of Army Aviation Aircraft [*Instructor Guide, Appendix F*]).

T-VG 65/66 (Off)

T-VG 64 (On)

> (2) Identify unit mission essential tasks (Source: Unit operations and training staff).
>
> (3) Incorporate activities that emphasize crew coordination (Sources: TC 1-210; Aircraft ATM; General paragraph[*Instructor Guide*, Appendix F]).
>
> (4) Develop a scenario outline (Sources: Sample Scenario [*Instructor Guide*, Appendix F]; simulator facility).

T-VG 64 (Off)

T-VG 62

T-VG 67 (On)

> (5) Identify activity breakpoints and describe the major activities and focus for each scenario segment (Sources: FMs; ARTEP MTPs; Sample Scenario [*Instructor Guide*, Appendix F]).   [T-VG 65]

T-VG 67 (Off)

T-VG 64 (On)

> (6) Select ATM tasks (Sources: FMs; Aircraft ATM).
>
> (7) Transpose scenario outline to the tactical training area available (Sources: Unit operations and training staff; simulator facility).
>
> (8) Develop OPORD and/or air mission briefing and develop an instructor operator script for simulator scenarios (Sources: AR 95-1; FMs; ARTEP MTPs; Unit SOP; Table F-2, Sample OPORD and Sample Scenario [*Instructor Guide*, Appendix F]; Aircraft ATM; simulator facility).

T-VG 68

c. Scenario materials

> (1) Instructors should instill a sense of unit mission and mission planning realism in the aircrew coordination training by providing the scenario-based materials listed in Table 4-1. (See Appendix F of the *Instructor Guide* for examples of these materials.)

Table 4-1. Scenario Materials

Scenario Item	Student	Instructor	Simulator Operator
OPORD and/or Air Mission Briefing[1]	X	X	X
Scenario Outline		X	X
Scenario Segment Info		X	X
Tactical Map	X	X	X
Approach Plate	X	X	X
Grade Slip		X	
Note:			
1 Provide an instructor operator script for simulator scenarios			

T-VG 69

4. Audio-Visual Support

   a. Video and/or audio playback and review of aircrew actions has proven to be a powerful training technique.

   b. It is possible to record the aircrew during all phases of a mission (i.e., premission planning and rehearsal, mission execution in the simulator or aircraft, and crew-level after-action review).

   c. The types of audio-visual equipment available to aircrew coordination training instructors will greatly determine the extent to which this training opportunity is realized. The equipment listed in Table 4-2 is representative of what is needed to fully support aircrew coordination training conducted by units in the field. Although all of this equipment may not be available at installation audio-visual support centers, the use of even sub-optimal equipment configurations will be worth the effort!

T-VG 70

Table 4-2. Audio-Visual Support

Audio-Visual Equipment, (Quantity), & Approximate cost	Premission Planning	Mission Execution	After Action Review
Video camera w/tripod (1) $900	X		X
Compact video camera (1-3) $1,800 each		X^1	
Video recorder player (1) $400	X^2	X^2	X^2
Monitor (1) $200	X^2	X^2	X^2
Audio recorder (1) $100	X^3	X^3	X^3

Notes:

1 Cockpit location may create air worthiness considerations; requires a multiplexer (screen splitter) to monitor multiple cameras simultaneously

2 Required to record and monitor aircrews

3 Alternative to video camera, VCR, and monitor

5 Scenario Familiarization and Evaluation

What you will find in this section:

☑ Scenario Familiarization

☑ Instructor Practice Evaluations

5

Scenario Familiarization and Evaluation

25+00/T-VG 71

Scenario Familiarization and Evaluation (6 hours)

Note: This section transitions student instructors from the classroom into the simulator or aircraft. The first hour presents the IPs, UTs, and IOs with a complete simulator scenario (Appendix F, Instructor Guide), which the IPs and UTs, as crews and evaluators, will then execute during hours two through six. Aircrew coordination trainers will critique the student instructor's performance as crews and evaluators.

.... **Scenario Familiarization** ....

1. Review and discuss the sample scenario materials (*Instructor Guide*, Appendix F).

2. Emphasize the main points of each scenario item and intended use by student, instructor, and simulator operator.

3. Review the simulator or flight schedule for the student instructor crew coordination rides.

   Note: Subsequent to the sample scenarios review, unit instructors will be released to comply with the simulator or flight training and evaluation schedule provided by the trainers. Ensure that each unit instructor knows the time and place to reconvene following the training so that a course completion ceremony, if desired, may be held.

Note: The simulator or flight training and evaluation schedule will show crew pairings and their assignment to either fly or evaluate/operate the simulator for a particular mission. It is recommended that the crews flying or evaluating/operating the simulator on a particular mission reverse roles for the following flight.

1. Organize IPs and UTs into crews.

   • Any two instructors may be paired during the familiarization; e.g., IP with IO, IO with UT, UT with IP.

2. Conduct simulator or flight training.

   a. 1.5 hours for planning the mission

   b. 1.75 hours for simulator or flight practice of scenario

   c. 1.75 hours for crew-level after-action review

3. Evaluations will follow the same process and procedures used for the student evaluation ride ("Run" ride).

4. Trainers will observe instructor crews, evaluators, and operators during premission planning and the after-action review. Trainers will review the evaluators' grades and ratings of the flight and the crew's performance. The trainers will then critique the entire mission to point out areas that require improvement or that were acceptable.

Note: Provide names and telephone numbers of training cadre in the event instructors require clarification or assistance prior to, during, or subsequent to conducting the Aircrew Coordination Course.

Appendix A -
Instructor Read-Ahead
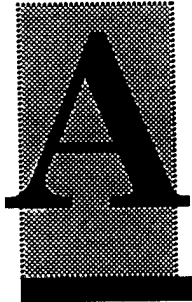
A Instructor Read-Ahead

What you will find in this appendix:

☑ The Instructor Read-Ahead that you will issue to the unit instructors one week prior to the start of the Aircrew Coordination Trainer Course.

This read-ahead is also included in the Reproducible Box for you to reproduce before the start of each new course.

Instructor Read-Ahead

Welcome to the Aircrew Coordination Trainer Course!

How many times have you, as an IP or UT, attempted to expedite the departure process by starting the aircraft without the assistance of the other crewmember? It may be understandable when you're working with new students who have limited knowledge of the procedures but what about when you're working with a fellow rated crewmember or rated student pilot? Is such IP action justifiable then? What is the role of the IP or UT during normal unit missions or check rides in two-place aircraft? (These and other questions will be explored during the Aircrew Coordination Trainer Course.)

One thing is clear from the example—the crew-members were *not* operating as a CREW! At the time, it did not seem as though there were circumstances that would require a rushed departure. One could assume that it was probably business as usual—and possibly a normal pattern of behavior for the IP. But—it was a TEST flight and not a check ride and *both* crewmembers should have been involved in the start-up and run-up checks of the aircraft. Was it the result of a particular mind set that led this particular IP to perform the Ps' functions without notification? Could not the IP have

> *The crew was preparing for a night test flight to determine the compatibility of NVGs with a new type of NBC mask. The P, wearing an NBC suit for test purposes, was experiencing difficulty ingressing the aircraft. Without waiting for the P to be properly seated and in a position to perform/assist in the engine start, the IP, who was on the controls, initiated an unsuccessful engine start from the left seat using the throttle control on the left seat collective and the trigger on the right seat collective. The IP failed to fully close the throttle after the initial start attempt. The IP then initiated a second start attempt before the P was connected to the IC and in position to perform or assist in the engine start. The second attempt resulted in a hot start (due to the open throttle) and destruction of the aircraft engine.*

delayed the start-up procedure and, in this case, saved an engine? These are questions that basically attack "the old way of doing things" and their answers in terms of aircrew coordination principles indicate that there must be a significant attitudinal change before we fully realize the benefits of the crew approach to flying an aircraft.

Is this attitudinal change possible? The answer is a resounding "Yes!!!" as evidenced by the U.S. Army's ground-breaking research on line aviation units. The lessons learned through this pioneering work are included in the Aircrew Coordination Course you are about to attend and, later, teach to your unit aircrews.

As an Aircrew Coordination Instructor, you have a critical role in bringing about the attitudinal change necessary for the Army to fully implement the crew approach to flight operations. Clearly, the Army has decided to change its training and evaluation focus from individual aviators to crews. This is a major shift in direction and your contribution is pivotal to its success. However, you, as an instructor, cannot "sell" the program to your students if you do not show a personal commitment to the

objectives of the Crew Coordination Program. Before this can happen, your Trainer Course instructors will show you the soundness of the program and hopefully make you a believer, too. In this manner, the attitudinal change we spoke of will be perpetuated throughout the Army down to every crewmember, both rated and nonrated. And how will we prepare you for this important role? Through training —pure and simple—and by supporting you in your role as trainer. Let's now look at the history of the training you will receive.

Aircrew coordination interest stems from the commercial airlines' discovery that mechanically safe aircraft were crashing for no apparent reason. Upon investigation, the U.S. Army found a similar trend in its Class A, B, and C accidents occurring during the period FY 84-89. Roughly 15% of the 596 accidents analyzed were classified as crew coordination error. Of these 15%, 41% were attributable to communications failures and 35% to workload and prioritization factors. Results of the analysis laid the basis for the development of a group of principles, designated as Crew Coordination Elements, which were incorporated into the rewrite of the training circulars governing aircrew training. Concurrent with these actions, work was progressing toward the development of an aircrew coordination course based on the results of an Army research study undertaken to validate aircrew coordination measurement materials. These measurement materials were necessary because, as with any training effort, if the results of aircrew coordination training were not measurable, then what would be the training benefits to be gained from the investment of resources required? In this case, the measurement materials were validated and work was begun to develop the academic instruction based on proven research models that described the aircrew coordination process. The result of that effort is the Aircrew Coordination Course.

Over the next several days of the Trainer Course you will be primarily trained in the presentation of the Aircrew Coordination Course. You will learn the Methods of Instruction (MOI) and then, in the role of student, we will present the entire Aircrew Coordination Course to you. Next, we will discuss the evaluation system and how to develop supporting scenarios based on your unit METL. Finally, we will go step-by-step through Scenario Familiarization and Evaluation so that you can learn and experience the exact procedure you will be guiding your unit aviators through when you begin to instruct the course—which is your next step.

Once you return to your unit, you will begin preparations to instruct your unit aircrews. An important part of your preparation is developing scenarios to support your aircrew coordination training and evaluating the effects—just like you learned in the Trainer Course. You will also need to schedule training, students, classrooms and simulators; assign blocks of instruction to other trainer team members so that all subjects are covered without anyone being overloaded; reproduce and distribute training materials; and, lastly, ensure that everything comes together as planned.

After you train and evaluate your unit aviation personnel, you can then assess the effectiveness of your program. You can do this by analyzing the Aircrew Coordination Grade Slips to detect shortcomings indicated by the number of particular Basic Qualities found to be lacking during evaluation rides. This fine-tuning process will continue for as long as the course is taught, thereby allowing the incorporation

of lessons learned to enhance the training experience.

To prepare yourself for the first and subsequent days of the course, you should read the following articles from Appendix G of your *Student Guide*:

For hours 1-6, pages G-1 to G-54

For hours 7-12, pages G-55 to G-100

For hours 13-18, pages G-101 to G-129

(Complete the PEs as directed by your instructor; i.e., either in class or at home.)

~ Once again, welcome to the Aircrew Coordination Program. You are a key player in this program and extremely important to its success. Please do not hesitate to call on your instructors at any time if you need assistance. ~